



#12

Our Docket No: 005493.P001

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|                                      |   |                            |
|--------------------------------------|---|----------------------------|
| In re Application of:                | ) |                            |
| Malcolm J. Simons                    | ) | Examiner: Not yet assigned |
| Application No.: 09/935,998          | ) | Art Unit: 1655             |
| Filed: August 23, 2001               | ) |                            |
| For: Intron Sequence Analysis Method | ) |                            |
| For Detection of Adjacent and        | ) |                            |
| Remote Locus Alleles as Haplotypes   | ) |                            |

STATEMENT UNDER 37 C.F.R. 1.821(f)

Mail Stop Sequence  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22213-1450

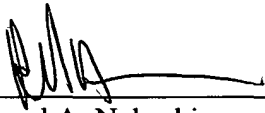
Dear Sir:

The Applicant hereby states that:

The written copy of the Sequence Listing submitted herewith does not include new matter (37 C.F.R. § 1.825 (a)) and the content of the computer-readable copy of the Sequence Listing, also submitted herewith, is identical to the written copy of the Sequence Listing (37 C.F.R. § 1.825).

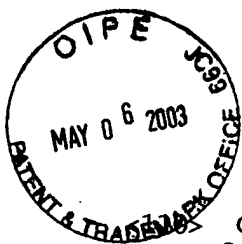
Respectfully Submitted,

BLAKELY, SOKOLOFF, TAYLOR &amp; ZAFMAN LLP

Date: May 2, 2003  
\_\_\_\_\_  
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Los Angeles, California 90025-1030  
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#12



Sequence Listing  
SEQUENCE LISTING

Genetic Technologies  
Simons, Malcom J.

<120> Intron Sequence Analysis Method for Detection of Adjacent and  
Remote Locus Alleles as Haplotypes

<130> 005493.P001

<140> 09/935,998

<141> 2001-08-23

<150> US 07/949,652

<151> 1992-09-23

<150> US 07/551,239

<151> 1990-07-11

<150> US 07/465,863

<151> 1990-01-16

<150> US 07/405,499

<151> 1989-09-11

<150> US 07/398,217

<151> 1989-08-25

<160> 78

<170> PatentIn version 3.1

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<211> 911

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<223> Class I-C1 allele

<400> 1

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gaatctctac ctggtgcttt cagacaacac ttcaccaggt ttaaagagaa aactcctgac

120

tctacacgtc cattcccagg gcgagctcac tgtctggcag caagttcccc atggctcgagt

180

ttccctgtac aagagtccaa ggggagaggt aagtgtcctt tattttgctg gatgtagttt

240

aatattacct gaggttaaggt aaggcaaaga gtgggaggca gggagtccag ttcagggacg

300

## Sequence Listing

gggattccag gagaagtga ggggaagggg ctgggcgag cctgggggtc tctccctggt  
360

ttccacagac agatccttgg ccaggactca ggcacacagt gtgacaaaga tgcttggtgt  
420

aggagaagag ggatcagacg aagtcccagg tcccgggcgg ggttctcagg gtctcaggct  
480

ccaaggggcg tgtctgcact ggggaggcgc cgcgttgagg attctccact cccctgagtt  
540

cacttcttct cccaacctgc gtcgggtcct tcttcctgaa tactcatgac gcgtcccaa  
600

ttcccactcc cattgggtgt cgggttctag aagccaatca gcgtctccgc agtcccgtt  
660

ctaaagtccc cagtcacca cccggactca gattctcccc agacgccgag atgcgggtca  
720

tggcgccccg aaccctcatc ctgctgctct cgggagccct ggccctgacc gagacctggg  
780

cctgtgagtg cggggttggg agggaaacgg cctctgcgga gaggaacgag gtgcccggcc  
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900

ctcgccccca g

911

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<211> 587  
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<223> Class I-C1 allele

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# Sequence Listing

120

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180

tgaagtcctt gaggaatgg aggggaagac agtccctgga atactgatca ggggtcccct

240

ttgaccactt tgaccactgc agcagctgtg gtcaggctgc tgaccttct ctcaggcctt

300

gttctctgcc tcacgttcaa tgtgtttgaa ggtttgattc cagcttttct gagtccttcg

360

gcctccactc aggtcaggac cagaagtcgc tgttctccc tcagagacta gaactttcca

420

atgaatagga gattatccca ggtgcctgtg tccaggctgg cgtctgggtt ctgtgcccc

480

ttccccacc caggtgtcct gtccattctc aggatggtca catgggcgct gttggagtgt

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<211> 913

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<223> Class I-C2 allele

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gaatctctac ctggtgcttt cagacaacac ttcaccaggt ttaaagagaa aactcctgac

120

tctacacgtc cattcccagg gcgagctcac tgtctggcat caagttcccc atggtgagtt

180

tccctgtaca agagtccaag gggagaggta agtgtccttt attttgctgg atgtagttta

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atattacctg aggtaaggta acggaaagag tggggaggca gggagtccag ttcagggacg

# Sequence Listing

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gggattccag gagaagtgaa ggggaagggg ctggcgagc ctgggggtct ctccctggtt

360

tccacagaca gatccttccg gaggactcag gcacacagtg tgacaaagat gcttggtgta

420

ggagaagagg gatcaggacg aagtcccaga cccgggcggg gttctcaggg tctcaggctc

480

caaggggctg gtctgcactg gggaggcgcc gcgttgagga ttctccactc ccctgagttt

540

cacttcttct cccaacctgc gacgggtcct tcttctgaa tactcatgac gcgtcccca

600

ttccactcc attgggtgtc gggttctaga gaagccaatc accgtctccg cagtcccggt

660

tctaaagtcc ccagtcaccc acccggaactc ggattctccc cagacgccga gatgcgggtc

720

atggcgcccc gaaccctcat cctgctgctc tcgggagccc tggccctgac cgagacctgg

780

gcctgtgagt gcggggttgg gagggaaacg gcctctgcgg agaggagcga ggggcccgcc

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900

tcctctcccc cag

913

<210> 4

<211> 588

<212> DNA

<213> Homo sapiens

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<221> misc\_feature

<223> Class I-C2 allele IVS3

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# Sequence Listing

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120  
ggatgagttt tcctgagttt cctctgaggg cccctctgc tctctaggac aattaaggga  
180  
tgaagtcctt gaggaaatgg aggggaagac agtccttgga atactgatca ggggtccctt  
240  
ttgaccactt tgaccactgc agcagctgtg gtcaggctgc tgaccttct ctcaggcctt  
300  
gttctctgcc tcacgttcaa tgtgtttgaa ggtttgattc cagcttttct gagtccttcg  
360  
gcctccactc aggtcaggac cagaagtcgc tgttctctcc tcagagacta gaactttcca  
420  
atgaatagga gattatcca ggtgcctgtg tccaggctgg cgtctgggtt ctgtgcccc  
480  
ttccccaccc caggtgtcct gtccattctc aggatagtca catgggcgct gttggagtgt  
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<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (75)..(76)  
<223> "N" is an unidentified nucleotide

<220>  
<221> misc\_feature  
<223> Class I-C3 allele

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ttgggtgtcg gaccnntcta gaaggccggt cagcgtctcc gcagtcccgg ttctgaagtc  
120  
cccagtcacc caccggact cagattctcc ccagacgccg agatgcgggt catggcgccc

## Sequence Listing

180

cggaccctca tcctgctgct ctcgggagcc ctggccctga ccgagacctg ggccggtgag

240

tgcggggttg ggaggggaatc ggcctcttgc ggagaggagc gaggggcccg cccggcggag

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360

ccccag

366

<210> 6

<211> 578

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<223> Class I-C3 allele IVS3

<400> 6

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120

gatgagtttt cctgagtttc ctctgagggc cccctctgct ctctgaggac aattaagggga

180

tgaagtcctt gaagaaatgg aggggaagac agtccctaga atactgatca ggggtcccct

240

ttgaccactg cagcagctgt ggtcaggctg ctgaccttcc tctcaggcct tgttctctgc

300

ctcacgtca atgtgtttga aggtttgatt ccagcttttc tgagtccttc ggcctccact

360

caggtcagga ccagaagtcg ctgttcctcc ctgagagact agaactttcc aatgaatagg

420

agattatccc aggtgcctgt gtccaggctg gcgtctgggt tctgtgcccc cttccccacc

480

Sequence Listing

ccagggtgtcc tgtccgttct caggatgggc acatggggcgc tggtggagtg tcgcaagaga  
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gatacaaagt gtctgaattt tctgactctt cccgtcag  
578

<210> 7  
<211> 717  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<223> Class I-B27 allele

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agaggttaagg agtgagaggc agggagtcca gttcaggggac agggattcca ggaggagaag  
120

tgaaggggaa gcgggtgggc gccactgggg gtctctccct ggtttccaca gacagatcct  
180

tgtgccggac tcaggcagac agtgtgacaa agaggctggt gtaggagaag agggatcagg  
240

acgaacgtcc aaggccccgg gcgcgggtctc aggggtctcag gctccgagag ccttgtctgc  
300

attggggagg cgcacagttg gggttcccca ctcccacgag ttctacttct tctcccaacc  
360

tatgtcgggt ccttcttcca ggatactcgt gacgcgtccc catttccact cccattgggt  
420

gtcgggtgtc tagagaagcc aatcagtgtc gccgggggtcc cagttctaaa gtccccacgc  
480

accacccgg actcagaatc tcctcagacg ccgagatgcg ggtcacggcg ccccgaacc  
540

tcctcctgct gctctggggg gcagtggccc tgaccgagac ctgggctggt gagtgcgggg  
600

tcaggcaggg aaatggcctc tgtggggagg agcgagggga cgcaggcggg ggcgcaggac  
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## Sequence Listing

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<210> 8  
<211> 575  
<212> DNA  
<213> Homo sapiens  
  
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<221> misc\_feature  
<223> Class I-B27 allele IVS3

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cgagaagagg aggaaaatgg gatcagcgct agaatgtcgc cctcccttga atggagaatg  
120

gcatgagttt tcctgagttt cctctgaggg cccctcttc tctctaggac aattaaggga  
180

tgacgtctct gaggaaatgg aggggaagac agtcctaga atactgatca ggggtcccct  
240

ttgaccctg cagcagcctt gggaaccgtg acttttcctc tcaggccttg ttcacagcct  
300

cacactcagt gtgtttgggg ctctgattcc agcacttctg agtcacttta cctccactca  
360

gatcaggagc agaagtcctt gttccccgct cagagactcg aactttccaa tgaataggag  
420

attatcccag gtgcctgcgt ccaggctggt gtctgggttc tgtgcccctt cccacccca  
480

ggtgtcctgt ccattctcag gctggtcaca tgggtggtcc tagggtgtcc catgagagat  
540

gcaaagcgcc tgaattttct gactcttccc atcag  
575

<210> 9  
<211> 289  
<212> DNA  
<213> Homo sapiens

## Sequence Listing

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<221> misc\_feature  
<223> Class I-B58 allele

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120  
ctgctctggg gggcagtggc cctgaccgag acctgggccg gtgagtgcgg ggtcgggagg  
180  
gaaatggcct ctgtggggag gagcgagggg accgcaggcg gggg'gcagg acctgaggag  
240  
ccgcgccggg aggaggggtcg ggcgggtctc agccccctct cgccccag  
289

<210> 10  
<211> 575  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<223> Class I-B58 allele IVS3

<400> 10  
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cgagaagagg aggaaaatgg gatcagcgct agaatgtcgc cctcccttga atggagaatg  
120  
gcatgagttt tcctgagttt cctctgaggg cccctcttc tctctaggac aattaaggga  
180  
tgacgtctct gaggaaatgg aggggaagac agtccctaga atactgatca ggggtcccct  
240  
ttgaccctg cagcagcctt gggaaccgtg acttttcctc tcaggccttg ttctctgcct  
300  
cacactcagt gtgtttgggg ctctgattcc agcacttctg agtcacttta cctccactca  
360  
gatcaggagc agaagtcctt gttccccgct cagagactcg aactttccaa tcaataggag

## Sequence Listing

420

attatcccag gtgcctgcgt ccaggctggg gtctgggttc tgtgcccctt cccacacca

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<210> 11

<211> 728

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<223> Class I-A2 allele

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120

aaagtgaaag gagagggacg gggcccatgc cgagggtttc tcccttgttt ctcagacagc

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240

cagggcgaag tccagggccc caggcgttgg ctctcagggt ctcaggcccc gaagggcggt

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gtatggattg gggagtccca gccttgggga ttccccaact ccgcagtttc ttttctcct

360

ctcccaacct atgtagggtc cttcttcctg gatactcacg acgcggaccc agttctcact

420

cccattgggt gtcgggtttc cagagaagcc aatcagtgtc gtcgcggtcg cggttctaaa

480

gtccgcacgc acccaccggg actcagattc tccccagacg ccgaggatgg ccgtcatggc

540

# Sequence Listing

gccccgaacc ctcgtcctgc tactctcggg ggctctggcc ctgaccaga cctgggcggg

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720

gtccccag

728

<210> 12

<211> 599

<212> DNA

<213> Homo sapiens

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<221> misc\_feature

<223> Class I-A2 allele IVS3

<400> 12

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agaggaatcc tcctgggttt ccagatcctg taccagagag tgactctgag gttccgccct

180

gctctctgac acaattaagg gataaaatct ctgaaggaat gacgggaaga cgatccctcg

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aatactgatg agtgggtccc ttgacacac acaggcagca gccttggggc cgtgactttt

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cctctcaggc cttgttctct gcttcacact caatgtgtgt gggggctctga gtccagcact

360

tctgagtcct tcagcctcca ctcaggtcag gaccagaagt cgctgttccc tcttcaggga

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ctagaatttc cacggaatag gagattatcc caggtgcctg tgtccaggct ggtgtctggg

480

ttctgtgctc ctttcccat cccaggtgtc ctgtccattc tcaagatagc cacatgtgtg

540

## Sequence Listing

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<210> 13

<211> 450

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<223> Class I-A3 allele

<400> 13

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cttttctccc ctgctcccaa cctacgtagg gtccttcac tcggatactc acggacgcgg

120

accagttct cactcccatt ggggtgtcggg tttccagaga agccaatcag tgtcgtcgct

180

gttctaaagc ccgcacgcac ccaccgggac tcagattctc cccagacgcc gaggatggtc

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gtggagacca ggccgtcatg gcgccccgaa ccctcctcct gctactctcg ggggccctgg

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ccctgaccca gacctgggcg ggtgagtgcg gggtcgggag ggaaccacgc ctctgcgggg

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420

cgggcggggtc tcagccactg ctccccccag

450

<210> 14

<211> 576

<212> DNA

<213> Homo sapiens

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<221> misc\_feature

<223> Class I-A3 allele IVS3

<400> 14

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## Sequence Listing

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120

gaggaattct tcttggtttc aggacctgga ccagagagtg actctgaggt ttcggcctgc

180

tcacaggcac aattaaggga taaatctctg aaggagtgc gggaagacga ttccttggat

240

tctggtgagt ggttcccttt ggcaccggcg acggccttgg gcccgtagact tttcctctca

300

ggccttggtc tctgcttcac actcaatgtg tgtgggggtc tgagtccagc acttctgagt

360

ccctcagcct ccactcaggt caggaccaga agtcgctgtt cccttctcag ggaatagaag

420

attatcccag gtgcctgtgt ccaggctggt gtctgggttc tgtgtccct tccccatccc

480

gggtgtcctg tccattctca agatggccac atgcgtgctg gtggagtgtc ccatgacaga

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<211> 435

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (348)..(348)

<223> "N" is an unidentified nucleotide

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<221> misc\_feature

<223> Class I-Ax allele

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tctcttcttc tcacaacctg cgacgggtcc ttcttcctcg atactcacga agcggacaca

120

## Sequence Listing

gtttctattc ccactaggtg tcgggtttct agagaagcca atcgggtgccg ccgcggtccc

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ggttctaaag tccccacgca cccaccggga ctcagattct ccccagacgc cgaggatgtc

240

gccgtcatgg cgccccgaac cctcctcctg ctgctctcag gggccctggc cctgacctag

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acctggggcg gtgagtgcag ggtctgcagg gaaatggtcg ggaggagnga ggggcccgcc

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420

cctcctcgct cccag

435

<210> 16

<211> 569

<212> DNA

<213> Homo sapiens

<220>

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<223> Class I-Ax allele IVS3

<400> 16

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300

tctgcttcac actcaatgtg cgtgggggtc tgagtcctca gcctccactc aggtcaggac

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cagaagtcgc tgttccctct tcagggacta gaattttcca cggaatagga gattattcta

## Sequence Listing

420

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480

gtcaattctc aagatggcca catgcgtgct ggtggagtgt cccatgacag atgcaaaatg

540

cctgaatttt ctgactcttt tcccgtcag

569

<210> 17

<211> 442

<212> DNA

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tcttttctcc ctgtcccaac ctatgtaggg tccttctcct ggatactcac gacgcggacc

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cagttctcac tcccattggg tgtcggggtt cgagagaagc caatcaatgt cgtcgcggtc

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gctgttctaa agtccgcacg caccaccgg gactcagatt ctccccagac gccgaggatg

240

gccgtcatgg ggccccgaac cctcgtcctg ctactctcgg gggccctggc cctgacccag

300

acctgggcag gtgagtgcgg ggtcgggagg gaaatcggcc ctctgcgggg agaagcaagg

360

ggccccgctg gcggggggcg aagaccggg aagccgcgcc gggaggaggg tcgggcgggt

420

ctcagccact cctcgtcccc ag

442

<210> 18

<211> 558

<212> DNA

<213> Homo sapiens



## Sequence Listing

<220>  
<221> misc\_feature  
<223> Class I-A24 allele IVS3

<400> 18  
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acaaggaggg gagacaattg ggaccaacac tagaatatcg ccctccctct ggtcttgagg  
120  
gagaggaatc ctctgggtt tccagatcct gtaccagaga gtgactctga ggttccgccc  
180  
tgctctctga cacaattaag ggataaaatc tctgacggaa tgacggaaag acgatccctc  
240  
gaatactgat gactggttcc ctttgacacc ggcagcagcc ttgggaccgt gacttttcct  
300  
ctcaggcctt gttctctgct tcacactcaa tgtgtgtggg ggtctgagtc cagcacttct  
360  
gagtcctca gcctccactc aggtcaggac cagaagtcgc tgttccctct tcagggaata  
420  
gaagattatc ccagggcctg tgtccaagct ggtgtctggg ttctgtactc ttttcccgt  
480  
cccaggtgtc ctgtccattc tcaagatggc cacatgcatg ctggtggagt gtcccatgac  
540  
aggtgcaaaa cccgtcag  
558

<210> 19  
<211> 806  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<223> DQA1-A3

<400> 19  
gatctctgtg tagaatgtcc tgttctgagc cagtcctgag aggaaaggaa gtataatcaa  
60

# Sequence Listing

```

tttgttatta actgatgaaa gaattaagtg aaagataaac cttaggaagc agaggggaagt
120
taatctatga ctaagaaagt taagtactct gataactcat tcattccttc ttttgttcat
180
ttacattatt taatcacaag tctatgatgt gccaggctct caggaaatag tgaaaattgg
240
cacgcatat tctgcccttg tgtagcacac accgtagtgg gaaagaagtg cacttttaac
300
cggacaacta tcaacacgaa gcggggagga agcaggggct ggaaatgtcc acagactttg
360
ccaaagacaa agcccataat atctgaaagt cagtttcttc catcattttg tgtattaagg
420
ttctttattc ccctgttctc tgccttcctg cttgtcatct tcactcatca gctgaccatg
480
ttgcctctta cgggtgtaaac ttgtaccagt cttatgggtcc ctctgggcag tacagccatg
540
aatttgatgg agacgaggag ttctatgtgg acctggagag gaaggagact gtctggcagt
600
tgcctctggt ccgcagattt agaagatttg acccgcaatt tgcactgaca aacatcgctg
660
tgctaaaaca taacttgaac atcgtgatta aacgctcaa ctctaccgct gctaccaatg
720
gtatgtgtcc accattctgc ctttctttac tgatttatcc ctttatacca agtttcatta
780
ttttctttcc aagaggtccc cagatc
806

```

```

<210> 20
<211> 819
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> DQA-1A1.2

```

# Sequence Listing

<400> 20  
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60  
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120  
taaacctaatt ttctgactaa gaaagctaaa tactatgata actcattcat tccttctttt  
180  
gttcaattac attatttaatt cataagtcca tgacgtgcca ggcactcagg aaatagtaaa  
240  
aattggacat gcgatattct gcccttgtgt agcgcacact agagtgggaa agaaagtgca  
300  
cttttaactg gacaactacc aacatgaaga ggggaggaag caggggctgg aaatgtccac  
360  
agactgtgcc aaaaaatgaa gcccataata ttgaaagtc aggtctttcc atcattttgt  
420  
gtattaaggt tctttcttcc tctgttctcc gccttctctg ttgtcatctt cactcatcag  
480  
ctgaccacgt tgcctcttgt ggtgtaaact tgtaccagtt ttacgggtccc tctggccagt  
540  
acacccatga atttgatgga gatgagcagt tctacgtgga cctggagagg aaggagactg  
600  
cctggcggtg gcctgagttc agcaaatttg gaggttttga cccgcagggt gcactgagaa  
660  
acatggctgt ggcaaaacac aacttgaaca tcatgattaa acgctacaac tctaccgctg  
720  
ctaccaatgg tatgcgtcca ccattctgcc tctctttact taataagcta tccctccata  
780  
ccaaggttca ttattttctt cccaagaggt ccccgatc  
819

<210> 21  
<211> 815  
<212> DNA  
<213> Homo sapiens

## Sequence Listing

<220>  
<221> misc\_feature  
<223> DQA1-A4.1

<400> 21  
gacctctgtg tagagtgtcc tgttctgagc cagtcctgag aggaaagaaa atacaatcag  
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tttgttatta actgatgaaa gaattaagtg aaagatgaat cttaggaagc agaaggaagt  
120  
aaacctaadc tctgactaag aaagctaaat accataataa ctcattcatt ccttcttttg  
180  
ttcaattaca ttgatttaac cataagtccg tgatgtgccg ggcactcagg aaatagtaaa  
240  
aactggacat gtgatattct gcccttgtgt agcgcacatt atagtgggaa agaaagcgca  
300  
attttaaccg gacaactacc aacaataaga gtggaggaag caggggttgg aaatgtccac  
360  
aggctgtgcc aaagatgaag cccgtaatat ttgaaagtca gttcttttca tcatcatttt  
420  
gtgtattaag gttctgtctt cccctgttct ctcacttcct gcttgtcatc ttcactcatc  
480  
agctgaccac gtcgcctctt atgggtgtaa cttgtaccag tcttacgggc cctctggcca  
540  
gtacacccat gaatttgatg gagatgagca gttctacgtg gacctgggga ggaaggagac  
600  
tgtctggtgt ttgcctgttc tcagacaatt tagaatttga cccgcaattt gcactgacaa  
660  
acatcgctgt cctaaaacat aacttgaaca gtctgattaa acgctccaac tctaccgctg  
720  
ctaccaatgg tatgtgtcaa caattctgcc cctctttact gatttatccc ttcataccaa  
780  
gtttcattat tttatttcca agaggtcccc agatc  
815

## Sequence Listing

<210> 22  
<211> 1292  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<223> DQB1

<400> 22  
aagcttgtgc tctttccatg aataaatgtc tctatctagg actcagaggt gtaggtcctt  
60  
tccaacatag aagggactga acctcaacgg gacttgggag ggtaaatacta ggcattgggaa  
120  
ggaaggtatt ttaccaggg accaagagaa tacgcgtgtc agaacgaggc caggcttaat  
180  
tcctggacct atctcgtcat tccgttgaac tctcagattt atgtggataa ctttatctct  
240  
gaggtatcca ggagcttcat gaaaaatggg atttcatgcg agaacgccct gatccctcta  
300  
agtgcagagg tgcattgaaa atcagccga ctgcctcttc gctgggttca caggctcagg  
360  
cagggacagg gctttcctcc ctttcttga tgtaggaagg cagattccag aagcccga  
420  
agaaggcggg cagagctggg cagagccgcc gggaggatcc caggctctgga gcgccaggca  
480  
cgggcgggcg ggaactggag gtcgcgcggg cggttcaca gctccaggcc gggtcagggc  
540  
ggcggctgcg ggggcggccg ggctggggcc tgactgaccg gccggtgatt ccccgagag  
600  
gatttcgtgt accagtttaa gggcatgtgc tacttcacca acgggacgga gcgcgtgcgt  
660  
cttgtaacca gacacatcta taaccgagag gactacgcgc gcttcgacag cgacgtgggg  
720  
gtgtaccggg cggtgacgcc gcaggggagg cctgttgccg agtactggaa cagccagaag  
780

# Sequence Listing

gaagtcctgg agaggacccg ggcggagttg gacacggtgt gcagacacaa ctacgaggtg

840

gggtaccgcg ggatcctgca gaggagaggt gagcttcgtc gcccctccgt gagcgacccc

900

ttggccggga ccccgagtct ctgtgccggg agggcgatgg gggcgaggtc tctgaaatct

960

tgagcccagt tcattccacc ccagggaag gaggcggcgg cgggggtggt gggggcaggt

1020

gcacgaggtg ggcggggacc tagggcagag cagggggaca agcagagttg gccaggctgc

1080

ctagtgtccc cccagcctc ctgctccgtc ggctcgtcc tctgctctgg acgtttctcg

1140

cctcgtgcct tatgcgtttg cctcctcgtg ccttaccttc gctaagcagt tctctctgcc

1200

cccagtgcc accctcttcc cctgcccgcc ggctcgtcta gcactgcccc acccagcaag

1260

gccacagtc gcgcattcgc cgaggaagc tt

1292

<210> 23

<211> 1291

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<223> DQB1

<400> 23

aagcttgtgc tctttccatg aataaatgtc tctatctagg actcagaggt gtaggtcctt

60

tccttcatag aagggactga acctcttcgg gacttgggag ggtaaatacta ggcattggaa

120

ggaaggattt ttaccaggga accaagagaa tacgcgtgtc agaacgaggc caggcttaat

180

tcctggacct atctcgtcat tccgttgaac tctcagattt atgtggataa ctttatctct

240

# Sequence Listing

gaggtatcca ggagcttcat gaaaaatggg atttcatgcg agaacgccct gatccctcta  
300

agtgacagagg tgcattgaaa atcagcccga ctgcctcttc gctgggttca caggctcagg  
360

cagggacagg gctttcctcc ctttcctgga tgttaggaagg cagattccag aagccccgaa  
420

agaaggcggg cagagctggg cagagccgcc gggaggatcc caggctctgga gcgccaggca  
480

cgggcggggc ggaactggag gtcgcgcggg cggttccaca gctccaggcc gggtcagggc  
540

ggcggctgcg ggggcggccg ggctggggcc tgactgaccg gccggtgatt ccccgacagag  
600

gatttcgtgt accagtttaa gggcatgtgc tacttcacca acgggacgga gcgcgtgcgt  
660

cttgtaacca gacacatcta taaccgagag gagtacgcgc gcttcgacag cgacgtgggg  
720

gtgtaccggg cggtgacgcc gcaggggagg cctgttgccg agtactggaa cagccagaag  
780

gaagtccttg agaggacccg ggcggagttg gacacggtgt gcagacacaa ctacgaggtg  
840

gggtaccgcg ggatcctgca gaggagaggt gagcgtcgtc gccctccgt gagcgcaccc  
900

ttggccggga ccccgagtct ctgtgccggg agggcgatgg gggcgaggtc tctgaaatct  
960

gagcccagtt cattccaccc cagggaaagg aggcggcggc ggggggtggtg ggggcaggtg  
1020

catcgagggg gcggggacct agggcagagc agggggacaa gcagagttgg ccaggctgcc  
1080

tagtgtcccc ccagcctcc ccgtccgtcg gcctcgtcct ctgctctgga cgtttctcgc  
1140

ctcgtgcctt atgcgtttgc ctctcgtgc cttaccttcg ctaagcagtt ctctctgccc

## Sequence Listing

1200

ccagtgccca ccctcttccc ctgcccgcg gcctcgctag cactgcccc cccagcaagg

1260

cccacagttg ccgattcgcc gcaggaagct t

1291

<210> 24  
<211> 1289  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (448)..(453)  
<223> "N" is an unidentified nucleotide

<220>  
<221> misc\_feature  
<223> DQB1

<400> 24  
aagcttgtgc tctttcggtg aataaatgtt tctttctagg actcagagat ctaggactcc

60

cttcttttcta acacagacgt gagtgaacct cacagggcac ttgggagggt aaatccaggc

120

atgggaagga aggtatttta cccagggacc aagagaatag gcgtatcgga agaggacagg

180

tttaattcct ggacctgtct cgtcattccc ttgaactgtc aggtttatgt ggataacttt

240

atctctgagg taccaggagc tccatgaaa atgagatttc atgcgagaac gccctgatcc

300

ctctaagtgc agagggtccat gtaaaatcag cccgactgcc tcttcacttg gttcacaggc

360

cgagacaggg acagggtttt cctccctttc ctgcctgtag gaaggccgga ttcccgaaga

420

cccccgagag ggcgggcagg gctggcanan ccnccgggag gatcccaggt ctgcagcgcg

480

aggcacgggc gggcggggaac ttgtggtcgc gcgggctgtt ccacagctcc gggccgggtc

540



## Sequence Listing

aggggtggcgg ctgcgggggc ggacgggctg ggccgcactg accggccggt gattccccgc  
600

agaggatttc gtgtaccagt ttaagggcat gtgctacttc accaacggga cagagcgcg  
660

gcgtcttggt agcagaagca tctataaccg agaagagatc gtgcgcttcg acagcgacgt  
720

gggggagttc cgggcgggtga cgctgctggg gctgcctgcc gccgagtact ggaacagcca  
780

gaaggacatc ctggagagga aacgggcggc ggtggacagg gtgtgcagac acaactacca  
840

gttggagctc cgcacgacct tgcagcggcg aggtgagcgg cgtcgccctc tgcgaggccc  
900

acccttggcc ccaagtctct gcgccaggag ggggcaaggg tcgtggcctc tgaacctgag  
960

ccccgttggt tccaccccag ggaaaggagg cggcggcggg ggggtgctgg gggctggtgc  
1020

atcggagggg cagggaaccta gggcagagca gggggacagg cagagttggt caagctgcct  
1080

agtttcgccc catcctcccc gtccgtcggc ctcgccctct gctctgcacg ttcttgccctc  
1140

gtgccttatg cgtttgccct ctcgtgcctt acctttacta agcagttctc tctgccccca  
1200

atttccgccc tcttcccctg cccgcccgcc cggctagcac tgccgcaccc ggcaaggctc  
1260

acctacacag ctcatgcagt gggaagctt  
1289

<210> 25  
<211> 1307  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<223> DQB1

## Sequence Listing

<400> 25  
aagcttgtgc tctttccatg aataaatgtc tctatctagg actcggaggt gtaggtcctt  
60  
tccaacataa aagtgagtga acctcaaatg gcacttggga agggtaaadc taggcatggg  
120  
aagggaggta ttttaccag ggaccaagag aatacgcag tcagaacgag gacaggctta  
180  
atttctggac ccgtctcatc attcccttga actcacaggt ttatgtggat aattttatct  
240  
ctgaggtttc caggagctca atggaaaatg ggatttcatg cgagagcgcc ctgattccct  
300  
ctaagtgcag aggtctatgt aaaatcagcc cgactgcctc ttccctcggg tcacaggctc  
360  
cggcagggac agggctttcc gccctttcct gcctgcagga aggcggattc ccgaagcccc  
420  
cagagagggc gggcagggct gggcagagcc gccgggcgga tcacaagtct ggagcgccag  
480  
gcacgggcgg gcgggaactg gaggtcgcgc gggcggttcc acagctccgg gccgggtcag  
540  
ggcggcggct gcgggggcgg ccgggctggg gccgggcccgg ggcctgactg accggccggg  
600  
gattccccgc agaggatttc gtgtaccagt ttaaggcat gtgctacttc accaacggga  
660  
cggagcgcgt gcgtcttgtg accagataca tctataaccg agaggagtac gcacgcttcg  
720  
acagcgacgt gggggtgttc cgggcgggtga cgccgcaggg gccgcctgcc gccgagtact  
780  
ggaacagcca gaaggaagtc ctggagagga cccgggcgga gttggaacac ggtgtgcaga  
840  
cacaactacc agttggagct ccgcacgacc ttgcagcggc gaggtgagcg tcgtcgcccc  
900  
tccgtgaggg ccataccttgg caggggcccc gagtctctgc cgcgggaggg gcgaaggggg

## Sequence Listing

960

gcgcggcctct ggaaccttga gccttgttca ttccaccccg gctgacagga ggaggcggg

1020

gtggtggggg caggtgcatc ggaggggagg ggacctaggg cagagcaggg ggacaagcag

1080

agttggccag gctgcctagt gtccccccca gcctcctcgt ccgtcggcct cgtcctctgc

1140

tctggacgtt tctgcctcg tgccttatgc gtttgcctcc tcgtgcctta ccttcgctaa

1200

gcagttctct ctgccccag tggccaccct cttcccctgc ccgccggcct cgctagcact

1260

gccccaccca gcaaggccca cagtcgcgca ttcgccgcag gaagctt

1307

<210> 26

<211> 418

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<223> DPB 4.1

<400> 26

gggaagattt gggaagaatc gttaatatg agagagagag ggagaaagag gattagatga

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gagtggcgcc tccgctcatg tccgccccct cccgcgagag aattaccttt tccagggacg

120

gcaggaatgc tacgcgttta atgggacaca gcgcttcctg gagagataca tctacaaccg

180

ggaggagttc gcgcgcttcg acagcgacgt gggggagttc cgggcggtga cggagctggg

240

gcggcctgct gcggagtact ggaacagcca gaaggacatc ctggaggaga agcgggcagt

300

gccggacagg atgtgcagac acaactacga gctgggcggg cccatgaccc tgcagcgccg

360

# Sequence Listing

aggtagagtga gggctttggg ccggcggtcc cagggcagcc ccgcgggccc gtgcccag

418

<210> 27  
<211> 300  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<223> DPB9

<400> 27  
ggatccgcag agaattacgt gcaccagtta cggcaggaat gctacgcgtt taatgggaca

60

cagcgcttcc tggagagata catctacaac cgggaggagt tcgtgcgctt cgacagcgac

120

gtgggggagt tccgggcggt gacggagctg gggcggcctg atgaggacta ctggaacagc

180

cagaaggaca tcctggagga ggagcgggca gtgccggaca gggatatgcag acacaactac

240

gagctggacg aggccgtgac cctgcagcgc cgaggtgagt gagggctttg ggccggcggt

300

<210> 28  
<211> 300  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<223> DPB New

<400> 28  
ggatccgcag agaattacgt gcaccagtta cggcaggaat gctacgcgtt taatgggaca

60

cagcgcttcc tggagagata catctacaac cgggaggagt tcgtgcgctt cgacagcgac

120

gtgggggagt tccgggcggt gacggagctg gggcggcctg atgaggacta ctggaacagc

180

cagaaggacc tcctggagga gaagcgggca gtgccggaca gggatatgcag acacaactac

240

# Sequence Listing

gagctggacg aggccgtgac cctgcagcgc cgaggtgagt gagggctttg ggccggcggt  
300

<210> 29  
<211> 300  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<223> DPW3

<400> 29  
ctccccgcag agaattacct tttccaggga cggcaggaat gctacgcgtt taatgggaca  
60

cagcgcttcc tggagagata catctacaac cgggaggagt tcgcgcgctt cgacagcgac  
120

gtgggggagt tccgggcggt gacggagctg gggcggcctg ctgcggagta ctggaacagc  
180

cagaaggacc tcctggagga gaagcgggca gtgccggaca gggatatgcag acacaactac  
240

gagctggacg aggccgtgac cctgcagcgc cgaggtgagt gagggctttg ggccggcggt  
300

<210> 30  
<211> 23  
<212> DNA  
<213> Homo sapiens

<400> 30  
catgtggcca tcttgagaat gga  
23

<210> 31  
<211> 24  
<212> DNA  
<213> Homo sapiens

<400> 31  
gcccgggaga tctacaggcg atca  
24

<210> 32  
<211> 21  
<212> DNA

## Sequence Listing

<213> Homo sapiens

<400> 32

cgcctccctg atcgctgta g

21

<210> 33

<211> 19

<212> DNA

<213> Homo sapiens

<400> 33

ccagagagtg actctgagg

19

<210> 34

<211> 14

<212> DNA

<213> Homo sapiens

<400> 34

cacaattaag ggat

14

<210> 35

<211> 24

<212> DNA

<213> Homo sapiens

<400> 35

tccccggcga cctataggag atgg

24

<210> 36

<211> 23

<212> DNA

<213> Homo sapiens

<400> 36

ctaggaccac ccatgtgacc agc

23

<210> 37

<211> 27

<212> DNA

<213> Homo sapiens

<400> 37

atctcctcag acgccgagat gcgtcac

27

## Sequence Listing

<210> 38  
<211> 22  
<212> DNA  
<213> Homo sapiens

<400> 38  
ctcctgctgc tctggggggc ag

22

<210> 39  
<211> 25  
<212> DNA  
<213> Homo sapiens

<400> 39  
actttacctc cactcagatc aggag

25

<210> 40  
<211> 32  
<212> DNA  
<213> Homo sapiens

<400> 40  
cgtccaggct ggtgtctggg ttctgtgccc ct

32

<210> 41  
<211> 23  
<212> DNA  
<213> Homo sapiens

<400> 41  
ctggtcacat ggggtggcct agg

23

<210> 42  
<211> 26  
<212> DNA  
<213> Homo sapiens

<400> 42  
cgcctgaatt ttctgactct tcccat

26

<210> 43  
<211> 24  
<212> DNA  
<213> Homo sapiens

<400> 43  
atcccgggag atctacagga gatg

## Sequence Listing

24

<210> 44  
<211> 23  
<212> DNA  
<213> Homo sapiens

<400> 44  
aacagcgccc atgtgaccat cct

23

<210> 45  
<211> 27  
<212> DNA  
<213> Homo sapiens

<400> 45  
ctggggaggc gccgcgttga ggattct

27

<210> 46  
<211> 33  
<212> DNA  
<213> Homo sapiens

<400> 46  
cgtctccgca gtcccggttc taaagttccc agt

33

<210> 47  
<211> 18  
<212> DNA  
<213> Homo sapiens

<400> 47  
atcctcgtgc tctcggga

18

<210> 48  
<211> 18  
<212> DNA  
<213> Homo sapiens

<400> 48  
tgtggtcagg ctgctgac

18

<210> 49  
<211> 18  
<212> DNA  
<213> Homo sapiens



## Sequence Listing

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